

Unterricht mit Fairdinand

Developed by: Pädagogische Hochschule FHNW, Koboldgames GmbH

Article contributed by: Markus Neuenschwander, Binan Woll,

Koboldgames GmbH, Fabienne Girsberger, FHNW

<https://doi.org/10.5281/zenodo.15939332>

Keywords

Cognitive Bias, Critical Thinking, Equal Opportunities, Fairness, Inclusion



Example screens and visual material from the digital simulation game *Unterricht mit Fairdinand*. © Pädagogische Hochschule FHNW; Koboldgames GmbH. All rights reserved for the creators.

Introduction

In *Unterricht mit Fairdinand* (see Figure), players take on the role of a teacher. They are asked to assess various characteristics of students in the classroom based on short profiles—for example, their performance in mathematics and German, their acceptance within the class, and their problem behaviour. Based on a mathematical model, players receive feedback on their assessments. This feedback shows how their judgments affect students and whether they have overestimated or underestimated them.

Research shows that teachers' and parents' expectations and attributions of success can influence students' academic performance. This simulation game uses fictional case stories from everyday school life to illustrate these findings. It aims to raise awareness of unfair assessments in classroom practice. The game is aimed at teachers, school leaders, teacher education stu-

dents, social pedagogues, school social workers, school authorities, university lecturers, and interested parents and adolescents.

The game was developed by the University of Teacher Education FHNW in collaboration with Koboldgames GmbH and funded by the Swiss National Science Foundation.

Facts

Release date:	1 April 2025
Developer:	Pädagogische Hochschule FHNW, Koboldgames GmbH
Game type:	Digital
Number of players:	Single player
Format:	Hybrid
Time frame:	Workshops last at least 60 minutes; optimal duration is 90–120 minutes
Languages:	German
Environment:	Browser-based online game; computer, notebook, or tablet; game is embedded in workshops for 3–30 participants
Material:	Additional materials available at www.fhnw.ch/ph/fairdinand . The game can be accessed via this website.
Price:	The game is free. It is currently password-protected to prevent professionally inappropriate gameplay. The password can be provided on request to individuals with the required professional background.

Resonance & Criticism

The game addresses issues of fair assessment and equal opportunities in schools, which are currently the subject of intense debate. It combines the latest teaching research with applications in the school environment, thereby raising awareness of equal opportunities. It demonstrates a highly innovative approach to communicating research findings to the school community. Feedback highlights the novel and inspiring game concept and the appealing design. Online access is easy. The idea of experiencing the consequences of one's own expectations and attributions, and of testing their connections and effects playfully, is praised. A short introduction is recommended to make complex concepts and mechanics understandable.

Game Principle & Process

In *Unterricht mit Fairdinand*, players assume the role of Fairdinand, a teacher who teaches a class over two semesters. The fictional class consists of four eighth-grade students (approximately 14 years old), whose stories are presented over two semesters. The students differ in gender, socio-economic status, migration background, academic performance, behaviour, and leisure activities. The objective of the game is to improve students' performance in German and mathematics.

Players are repeatedly asked to assess various student characteristics: How does the teacher assess the student's performance? How might parents evaluate it? How does the student assess themselves? How popular is the student within the class? How problematic is the student's behaviour? These assessments significantly influence students' academic outcomes.

Game segments also change depending on the personal relationship the teacher develops with individual students. For example, it is easier to talk about personal problems and mistakes with a student with whom the teacher has a positive relationship. After each assessment, players receive feedback on student performance and other characteristics, as well as on the accuracy of their judgments. These calculations are based on a research-informed theoretical model operationalised through mathematical equations.

Optionally, two additional students are included for whom no narrative background is provided; assessments are made solely based on profile information. This allows interested players to experiment with the model and better understand and apply it.

Learning Objectives & Educational Fields of Application

The theoretical model underlying the game draws on educational theories and research on expectation effects (Rosenthal & Jacobson, 1974) and attribution effects (Weiner, 1985). Studies show that teachers' and parents' expectations in German and mathematics, as well as internal attributions of success, are influenced—after controlling for achievement—by students' gender, socio-economic status, and migration background (Neuenschwander & Niederbacher, 2021). The game makes these theories and findings tangible and applies them to classroom practice.

The learning objective of the game is to deepen understanding of these theories and their application in teaching, thereby increasing diagnostic self-efficacy. Feedback on players' assessments helps them apply theory to concrete situations, identify over- and underestimations, and become more sensitive to unfair judgments and educational inequality (Neuenschwander et al., 2021).

The simulation game is typically embedded in workshops. Before gameplay, facilitators should introduce the underlying theory. During gameplay, they should answer questions and moderate plenary discussions about players' experiences. After the game, facilitators support the transfer of new insights to assessment situations in participants' own professional contexts (e.g., classroom teaching). One facilitator can simultaneously accompany groups of approximately 25–30 participants.

Effectiveness

Because the game is very new, no impact study has yet been conducted; one is planned. Feedback on players' assessments motivates experimentation and improvement, as participants engage more deeply with the underlying theory and its mechanics.

The game offers several variants with differing cognitive demands: (a) experimental exploration of assessment effects for students without narratives; (b) immersion in student stories constructed according to the theoretical model, which is particularly accessible for students and parents without extensive theoretical knowledge; (c) exploration of supplementary theoretical materials on the website and application to concrete cases; and (d) workshop discussions that deepen understanding and support transfer to professional practice.

Potentially Problematic Aspects

The simulation addresses stereotypical prejudices and assessment biases based on structural characteristics, which may be emotionally challenging. Stories include narratives of students with migration backgrounds and Black students, which may be emotionally moving.

Gender-sensitive language is used throughout. Players can choose Mr., Ms., or no title and select avatars that are depicted as typically male, typically female, or without gender signals. This supports gender-sensitive discussion. The game was reviewed by the research ethics committee of the University of Teacher Education FHNW (Switzerland) and found to be ethically sound.

Reviewers: Michael Louis Eulenstein, Johannes Katsarov

Sources

- Neuenschwander, M. P., Mayland, C., Niederbacher, E., & Garrote, A. (2021). Modifying biased teacher expectations in mathematics and German: A teacher intervention study. *Learning and Individual Differences, 87*, 101995. <https://doi.org/10.1016/j.lindif.2021.101995>
- Neuenschwander, M. P., & Niederbacher, E. (2021). Disparitäten in Anstrengungsbereitschaft und Leistung nach SES, Familiensprache und Geschlecht: Folgen von Sozialisation oder von Diskriminierung durch verzerrte Lehrpersonenerwartungen. *Zeitschrift für Soziologie der Erziehung und Sozialisation, 41*(4), 449–466. <https://doi.org/10.3262/ZSE2104449>
- Rosenthal, R., & Jacobson, L. (1974). *Pygmalion im Unterricht: Lehrererwartungen und Intelligenzentwicklung der Schüler* (I. Brinkmann, Trans.; F. E. Weinert, Foreword). Beltz.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*(4), 548–573. <https://doi.org/10.1037/0033-295X.92.4.548>